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BORDEN LADNER GERVAIS LLP  
1100-100 QUEEN ST  
OTTAWA, ON K1P 1J9  
CANADA

EXAMINER

PHILPOTT, JUSTIN M

ART UNIT PAPER NUMBER

2616

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/084,325

Applicant(s)

SUEMURA, YOSHIHIKO

Examiner

Justin M. Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed May 24, 2006 have been fully considered but they are not persuasive.
2. Specifically, applicant argues that the newly amended language of "said low order path is set between any two of said first node types and said high order path is set between any two of said second node types" (emphasis on the newly added language) is not taught by Eberle. However, Eberle teaches these new limitations as discussed in the following office action. Thus, applicant's argument is not persuasive.

### ***Claim Objections***

3. Claims 1 and 3-12 are objected to because of the following informalities:
4. First, claims 1 and 3-12 were previously objected to and/or rejected under 35 U.S.C. 112, second paragraph due to significant inconsistencies with claim language with respect to "low order path(s)" and "high order path(s)" -- some recitations indicated only a single path of each existed while other references implied a plurality of the respective paths existed. The previous office action specifically detailed each line number and claim number for all unclear references to these "paths", and thus, these line numbers are not all repeated herein, particularly because the line numbers have changed as a result of the amendment. However, the objections from the previous office action are incorporated by reference herein.

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Applicant's amendment apparently attempted to correct these inconsistencies, however, the amendment appears to have caused more inconsistencies with respect to this language. At this time, applicant is respectfully requested to review each of claims 1 and 3-12 and amend these claims to recite *consistent* claim language so as to clearly indicate whether a plurality of such paths are being referenced, or only a single path is being referenced -- and if a single path is being referenced in any of the claims, using "said ... path" is inappropriate, lacking antecedent basis, if previously only a *plurality* of such "paths" were introduced without distinction of a particular *single* "path". For example, lines 4-5 of claim 1 recites "*a paths* ... referred to as *a low order paths*" (emphasis added) -- it is unclear whether applicant intends to recite "a low order path" (singular) or "low order paths" (plural). More unclear, however, line 9 of claim 1 recites "a high order path" (singular), but lines 11 and 12 each recite "said high order paths" (plural) while line 14 recites "said high order path" (singular). The same type of inconsistencies of a "said ... path" and "said ... paths" are made throughout claims 3-12. Appropriate correction is required.

5. Second, it appears that "including" (claim 9, line 19) should be changed to "includes".

6. Third, claims 10 and 11 recite a presumed pattern of "L-2, L-3, ..., L-2", which is unclear because there is no clear pattern. For example, a recitation of "L-2, L-3, ... L-(number greater than 3)" would be a clear pattern of reducing L by 1 with each step. However, the recitation of "L-2, L-3, ..., L-2" shows no clear pattern because the first step (from L-2 to L-3) reduces L by 1, then the last step (from presumably L-N where N is greater than 3) does *not* appear to reduce L by 1 or any other predictable value. Appropriate correction is required. For example, if " , ....., " is used to indicate following along with a pattern, a *pattern* must first be

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clearly indicated. One example of a pattern would be “L-2, L-3, ..., L-N; where N is an integer greater than 3”, or “L-2, L-3, ... L-N, (L-N)-1, ..., L-3, L-2”.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 8, 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites “these nodes” (line 13) and it is unclear what nodes are “these nodes”. For example, it is unclear whether “these nodes” refers to all of first-mentioned and second-mentioned nodes, nodes only corresponding to the separated high order path and low order path, or other nodes. Correction is required.

Claim 10 recites the limitations “length is L-1” and “length is L-2, L-3, ..., 2” which is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the lengths of “L-1”, “L-2” and “L-3” are indefinite since it is unclear what unit “L” is, and correspondingly what would be one or more integers less than L; assuming, e.g., that “L-1” refers to the length L minus the number 1, the value of “L-1” has no clear meaning if both L and “1” are not of the same unit. Further, it is unclear what the recitation of “..., 2” means. That is, it is unclear what “2” means, e.g., whether it is twice the length of L, or a path with two hops, or a specific value of length, and if so, what unit of length it is. Correction is required.

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Claim 11 recites the limitations “length is L, L-1, L-2, ..., 2”, “length is L-1, L-2, L-3, ... 2”, and “L-I, L-I-1, L-I-2, ... 2” which is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the lengths of “L-1”, “L-2” and “L-3” are indefinite since it is unclear what unit “L” is, and correspondingly what would be one or more integers less than L; assuming, e.g., that “L-1” refers to the length L minus the number 1, the value of “L-1” has no clear meaning if both L and “1” are not of the same unit. Further, it is unclear what the recitation of “..., 2” means. That is, it is unclear what “2” means, e.g., whether it is twice the length of L, or a path with two hops, or a specific value of length, and if so, what unit of length it is. Correction is required. Finally, if in claims 10 and 11 applicant intends to claim that the method of claim 9 accommodates routes in an order according to routes having the greatest or fewest number of hops, which is what Examiner believes may be the case, applicant should claim this limitation accordingly. The present language of claim 10 (lines 1-5) and claim 11 (lines 1-11) is unclear. Correction is required.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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10. Claims 1, 3, 5-9 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,975,626 by Eberle et al.

Regarding claim 1, Eberle teaches a communication network including a plurality of nodes and a plurality of link groups connecting these nodes, wherein said nodes include: a first node type (e.g., nodes 422/432 in quick channel switch 460, see FIG. 4) having a switch (e.g., switch 460) for switching a path having a predetermined bandwidth referred to as a low order path (e.g., low latency/quick channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps); and a second node type (e.g., nodes 420/430 at bulk channel switch 450 and quick channel switch 460) having a switch (e.g., quick channel switch 460) for switching the low order path (e.g., see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps), a switch (e.g., bulk channel switch 450) for switching a path having a bandwidth larger than the predetermined bandwidth referred to as a high order path (e.g., bulk channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 2.5 Gbps and aggregate bandwidth of 40 Gbps), multiplexing means (e.g., via multiplexer, see col. 10, lines 56-60) of multiplexing N, wherein N is an integer of two or more, of low order paths (e.g., request/output select signals; see col. 9, lines 34-38) on the high order path (e.g., bulk channel), and separating means (e.g., via output selector, see FIG. 4) of separating the high order path (e.g., bulk channel) into N lower order paths (e.g., grant/output select signals; see col. 10, lines 4-8), and the low order path (e.g., low latency/quick channel) is set between any two of the first type nodes (e.g., nodes 422/432) and the high order path (e.g., bulk channel) is set between

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any two of the second node types (e.g., nodes 420/430 at bulk channel switch 450 and quick channel switch 460).

Regarding claim 3, Eberle teaches a centralized control unit (e.g., bulk switch scheduler 440) capable of communication with all nodes and having a path table recording route information (e.g., prescheduled targets, see col. 11, lines 25-35) on all the existing low order paths, and the centralized control unit is set actively by the low order path and the high order path (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53).

Regarding claim 5, Eberle teaches the low order path may comprise a wavelength path and the high order path may comprise a wavelength group path (e.g., see col. 9, lines 59-63 regarding wavelength may be utilized; also, see col. 12, lines 55-59 regarding any combination of media comprising optical, wire, or wireless may be utilized).

Regarding claim 6, Eberle teaches the low order path may comprise a wavelength path (e.g., see col. 9, lines 59-63 regarding wavelength) and the high order path may comprise an optical path (e.g., see col. 9, lines 57-59 regarding optical path).

Regarding claim 7, Eberle teaches the low order path may comprise a wavelength group (e.g., see col. 9, lines 59-63 regarding wavelength) and the high order path may comprise an optical fiber path (e.g., see col. 9, lines 57-59 regarding optical path).

Regarding claim 8, Eberle teaches a path setting method in a communication network including: a first node type (e.g., nodes 420/430 at bulk channel switch 450 and quick channel switch 460) having a switch (e.g., switch 460) for switching a path having a predetermined bandwidth referred to as a low order path (e.g., low latency/quick channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of



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10.56 Gbps); the node type (e.g., nodes 420/430 at bulk channel switch 450 and quick channel switch 460) having a switch (e.g., quick channel switch 460) for switching the low order path (e.g., see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps), a switch (e.g., bulk channel switch 450) for switching a path having a bandwidth larger than the predetermined bandwidth referred to as a high order path (e.g., bulk channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 2.5 Gbps and aggregate bandwidth of 40 Gbps), multiplexing means (e.g., via multiplexer, see col. 10, lines 56-60) of multiplexing N, wherein N is an integer of two or more, low order paths (e.g., request/output select signals; see col. 9, lines 34-38) on the high order path (e.g., bulk channel), and separating means (e.g., via output selector, see FIG. 4) of separating the high order path (e.g., bulk channel) into N low order paths (e.g., grant/output select signals; see col. 10, lines 4-8); and a plurality of link groups connecting the nodes (e.g., links coupling nodes 420 and 430, see FIG. 4), wherein: in the case where N low order paths (e.g., links at quick channel switch 460) having a route including a section connecting two high order paths (e.g., links at bulk channel switch 450), the high order path (e.g., link at bulk channel switch 450) on which the N of the low order paths are multiplexed is determined through the section (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53).

Regarding claim 9, Eberle teaches a path setting method in a communication network including: a first node type (e.g., nodes 422/432 in quick channel switch 460, see FIG. 4) having a switch (e.g., switch 460) for switching a path having a predetermined bandwidth referred to as a low order path (e.g., low latency/quick channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps); a

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second node type (e.g., nodes 420/430 at bulk channel switch 450 and quick channel switch 460) having a switch (e.g., quick channel switch 460) for switching the low order path (e.g., see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps), a switch (e.g., bulk channel switch 450) for switching a path having a bandwidth larger than the predetermined bandwidth referred to as a high order path (e.g., bulk channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 2.5 Gbps and aggregate bandwidth of 40 Gbps), multiplexing means (e.g., via multiplexer, see col. 10, lines 56-60) of multiplexing N, wherein N is an integer of two or more, of low order paths (e.g., request/output select signals; see col. 9, lines 34-38) on the high order path (e.g., bulk channel), and separating means (e.g., via output selector, see FIG. 4) of separating the high order path (e.g., bulk channel) into N low order paths (e.g., grant/output select signals; see col. 10, lines 4-8); and a plurality of link groups connecting nodes of the first type sent (e.g., links coupling nodes 422/432, see FIG. 4), wherein: on a route of a first low order path having any two of the first node or the second node as its starting point node and endpoint node (e.g., links at quick channel switch 460), attention is paid to a section that is the second to Nth low order paths (e.g., links at quick channel switch 460) of which route includes the section, the high order path (e.g., links at bulk channel switch 450) on which the first Nth to low order paths are multiplexed is determined through the section (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53).

Regarding claim 12, Eberle teaches a node apparatus in a communication network including: a switch (e.g., quick channel switch 460, see FIG. 4) for switching a path having a predetermined bandwidth referred to as a low order path (e.g., low latency/quick channel, see

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col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 0.66 Gbps and aggregate bandwidth of 10.56 Gbps); a switch (e.g., bulk channel switch 450) for switching a path having a bandwidth larger than the predetermined bandwidth referred to as a high order path (e.g., bulk channel, see col. 4, lines 33-55 and col. 9, lines 39-47 regarding full-duplex bandwidth of 2.5 Gbps and aggregate bandwidth of 40 Gbps); multiplexing means (e.g., via multiplexer, see col. 10, lines 56-60) of multiplexing N, wherein N is an integer of two or more, of low order paths (e.g., request/output select signals; see col. 9, lines 34-38) on the high order path (e.g., bulk channel); separating means (e.g., via output selector, see FIG. 4) of separating the high order path (e.g., bulk channel) into N low order paths (e.g., grant/output select signals; see col. 10, lines 4-8); and a node controlling means (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53) having a path table recording route information (e.g., prescheduled targets, see col. 11, lines 25-35) on the low order paths passing a node, and wherein: the low order path and the high order path are set by the node controlling means (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle.

Regarding claim 4, Eberle teaches the communication network discussed above regarding claim 1, and further teaches a control unit (e.g., bulk switch scheduler 440) capable of communication with all nodes and having a path table recording route information (e.g., prescheduled targets, see col. 11, lines 25-35) on all the existing low order paths, and the centralized control unit is set actively by the low order path and the high order path (e.g., via bulk switch scheduler 440, see col. 9, line 5 – col. 11, line 53). Further, while Eberle may not specifically disclose the control unit is included in every node in the network, it is generally considered to be within the ordinary skill in the art to duplicate parts for a multiplied effect. St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to provide the scheduler 440 within each of the nodes in the system in order to provide increased operability for each node in the system, and since it is generally considered to be within the ordinary skill in the art to duplicate parts for a multiplied effect.

Regarding claims 10 and 11, Eberle teaches the path setting method discussed above regarding claim 9, however, may not specifically disclose specific lengths of paths. However, Eberle further teaches that while each stage in the path setting method may have equal length, “one of ordinary skill in the art appreciates that the length of the stages optionally is variable depending on design requirements” (col. 18, lines 45-48). Thus, Eberle implies that for design requirements such as routes of varied lengths or routes with varied other characteristics, the processing stages may be adjusted to adapt to such differences. Accordingly, one of ordinary skill in the art would recognize that for a system with varied lengths of routes, Eberle would suggest adapting the stages of a path setting method to accommodate the differences in path

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lengths. Moreover, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to adjust the lengths of the paths since it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. Further, in order to increase efficiency in such a routing system of varied path lengths, one of ordinary skill in the art would recognize the benefits in efficiency by accommodating the paths in order of path length. For example, accommodating the longest length path first would likely reduce processing steps for subsequent shorter length routes, e.g., a route with one less hop. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to accommodate the routes in Eberle in order of path length since Eberle implies that for design requirements such as routes of varied lengths or routes with varied other characteristics, the processing stages may be adjusted to adapt to such differences, and since in order to increase efficiency in such a routing system of varied path lengths, one of ordinary skill in the art would recognize the benefits of increased efficiency by accommodating the paths in order of path length.

***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

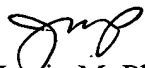
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

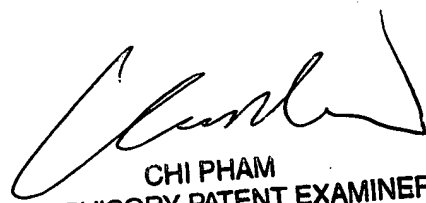
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571.272.3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Justin M. Philpott



CHI PHAM  
SUPERVISORY PATENT EXAMINER

7/20/07